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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,020	10/03/2005	Sanjay Suri	04-40419-US	9391
7590 Louis M Heidelberg Reed Smith 2500 One Liberty Place 1650 Market Street Philadelphia, PA 19103				
EXAMINER				
YOUNG, SHAWQUTA				
ART UNIT		PAPER NUMBER		
1626				
MAIL DATE		DELIVERY MODE		
08/19/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/520,020

**Applicant(s)**

SURI ET AL.

**Examiner**

SHAWQUIA YOUNG

**Art Unit**

1626

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 7-10, 13-16, 18-20 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 7-10, 13-16, 18-20 and 22-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 1, 3, 7-10, 13-16, 18-20 and 22-29 are currently pending in the instant application. Applicants have added new claims 27-29 in an amendment filed on May 7, 2008. The indication of claims 1, 3 and 7 as being allowed in the previous Office Action has been withdrawn because the Examiner has found prior art.

#### **I. *Response to Arguments/Remarks***

Applicant's amendment, filed May 7, 2008, has overcome the rejection of claims 8-10, 12-16, 18-20 and 22-26 under 35 USC 112, second paragraph as being indefinite; the rejection of claims 8, 10, 12, 14-16, 19, 20 and 22-24 under 35 USC 112, second paragraph as being indefinite; the rejection of claims 8, 10, 12, 14-16, 19, 20 and 22-24 under 35 USC 112, second paragraph as being indefinite; the rejection of claim 13 under 35 USC 112, second paragraph as being indefinite; the rejection of claims 14-16 under 35 USC 112, second paragraph as being indefinite; the objection of claim 10 as being of improper dependent form and the objection of claims 20 and 22-24 for informalities.

#### **II. *Rejection(s)***

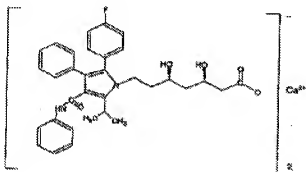
##### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 8, 10, 13 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by *Aronhime, et al.* (US 7,144,916). The instant invention claims a crystalline Form VI atorvastatin calcium with the formula



and characterized by the X-ray powder

diffraction pattern measured using a Shimadzu XRD-6000 with copper K radiation of  $\lambda 1.5406^\circ \text{ \AA}$  and with a relative intensity of  $>15\%$  having  $2\theta$  values 3.7365, 7.7200, 8.6985, 10.2185, 12.5933, 17.9103, 18.3600, 19.4031, 20.2800, 20.8200, 22.5122 and 25.5848. Applicants also claim a process for preparing the above Form which comprises a) dissolving calcium salt of any form of atorvastatin, a starting compound, in an aliphatic ketone at a temperature in the range of ambient to reflux temperature to get clear solution of atorvastatin salt, b) optionally removing impurities by filtration, c) adding

demineralized water maintaining the same temperature and d) isolating crystallized polymorphic Form VI of atorvastatin calcium.

The *Aronhime, et al.* reference teaches various crystal forms of atorvastatin hemi-calcium and specifically teaches form VI with X-ray powder diffraction powder peaks at 3.5, 5.1, 7.7, 8.2, 8.7, 10.0, 12.5, 13.8, 16.2, 17.2, 17.9, 18.3, 19.5, 20.4, 20.9, 21.7, 22.4, 23.2, 24.3,  $25.5 \pm 0.2$  degrees two-theta (See column 5, lines 6-10). This form of atorvastatin anticipates the claimed form of atorvastatin of the instant invention, wherein the X-ray powder diffraction pattern peaks in the prior art and the instant claims overlap. The prior art teaches that atorvastatin hemi-calcium Form VI can be obtained by dissolving any other form of atorvastatin hemi-calcium preferably form I, in acetone and then precipitating form VI by addition of an anti-solvent, preferably water.

### **35 USC § 103 - OBVIOUSNESS REJECTION**

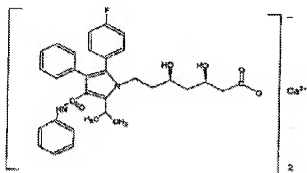
The following is a quotation of 35 U.S.C. § 103(a) that forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*Graham v. John Deere Co.* set forth the factual inquiries necessary to determine obviousness under 35 U.S.C. § 103(a). See *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Specifically, the analysis must employ the following factual inquiries:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 7, 14-16 and 22-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Aronhime, et al.* (US Patent 7,144,916). The instant invention claims a crystalline Form VI atorvastatin calcium with the formula



and characterized by the X-ray powder

diffraction pattern measured using a Shimadzu XRD-6000 with copper K radiation of  $\lambda 1.5406^\circ \text{A}$  and with a relative intensity of  $>15\%$  having  $2\theta$  values 3.7365, 7.7200, 8.6985, 10.2185, 12.5933, 17.9103, 18.3600, 19.4031, 20.2800, 20.8200, 22.5122 and 25.5848. Applicants further claim the above form characterized by the solid state C13 nuclear magnetic resonance spectrum (NMR) having chemical shifts in parts per million (PPM) at 21.898, 24.294, 27.767, 29.368, 33.939, 38.275, 42.836, 45.980, 68.932, 71.266, 73.617, 119.357, 122.987, 131.214, 137.515, 162.696, 169.066, 179.540, 186.890 and 190.640. Applicants also claim a process for preparing the above Form which comprises a) dissolving calcium salt of any form of atorvastatin, a starting compound, in an aliphatic ketone at a temperature in the range of ambient to reflux

temperature to get clear solution of atorvastatin salt, b) optionally removing impurities by filtration, c) adding demineralized water maintaining the same temperature and d) isolating crystallized polymorphic Form VI of atorvastatin calcium.

**The Scope and Content of the Prior Art (MPEP §2141.01)**

*Aronhime, et al.* teaches various crystal forms of atorvastatin hemi-calcium and specifically teaches form VI with X-ray powder diffraction powder peaks at 3.5, 5.1, 7.7, 8.2, 8.7, 10.0, 12.5, 13.8, 16.2, 17.2, 17.9, 18.3, 19.5, 20.4, 20.9, 21.7, 22.4, 23.2, 24.3,  $25.5 \pm 0.2$  degrees two-theta (See column 5, lines 6-10).

The prior art teaches that atorvastatin hemi-calcium Form VI can be obtained by dissolving any other form of atorvastatin hemi-calcium preferably form I, in acetone and then precipitating form VI by addition of an anti-solvent, preferably water.

**The Difference Between the Prior Art and the Claims (MPEP §2141.02)**

The difference between the prior art of *Aronhime, et al.* and the instant invention is that the instant application describes the solid state C13 NMR spectrum and the X-ray diffraction pattern whereas the prior art only teaches the X-ray diffraction pattern. The volume of the organic solvent used in the process of claim 8 has been modified.

**Prima Facie Obviousness-The Rational and Motivation (MPEP §2142-2413)**

Applicants are claiming a crystalline form of atorvastatin with an X-ray diffraction powder peaks at 3.7365, 7.7200, 8.6985, 10.2185, 12.5933, 17.9103, 18.3600, 19.4031, 20.2800, 20.8200, 22.5122 and 25.5848 and further discloses a solid state C13 nuclear magnetic resonance spectrum as disclosed in claim 3. The prior art teaches a similar form as the instant invention and shares overlapping X-ray diffraction powder peaks. Since the two forms share very similar X-ray diffraction powder peaks than one of ordinary skill in the art would assume that the NMR data would overlap as well between the two forms.

Therefore, it would have been prima facie obvious to one having ordinary skill in the art at the time the invention was made to obtain the C13 NMR spectrum to further characterize the crystalline form in the instant invention. For example, a skilled artisan would be motivated to prepare a 3-phenylnaphthalene wherein the phenyl ring is substituted by a monohalosubstituted methyl group instead of a trihalosubstituted methyl group as seen in the prior art reference of *Lefoulon, et al.* (US Patent 6,143,789). A strong prima facie obviousness has been established.

***Claim Rejections - 35 USC § 112, 2<sup>nd</sup> paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9,10,13-16, 18-20, 22-27 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 9



does not adequately define what Form of atorvastatin calcium is being prepared and Applicants have failed to include the X-ray diffraction powder peaks as seen in claim 1. To overcome the rejection Applicants should include the X-ray pattern powder peaks as seen in claim 1.

### **III. Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawquia Young whose telephone number is 571-272-9043. The examiner can normally be reached on 7:30 AM-4:00PM.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

/Shawquia Young/

Examiner, Art Unit 1626

/Kamal A Saeed, Ph.D./

Primary Examiner, Art Unit 1626

